

Data Storage

Compressing
Audio and Videos

Compressing Audio/Videos

Formats

- ✓ MPEG
- ✓ MP3

Compressing Audio/Videos

MPEG

- ✓ Motion Picture Expert Group lead by ISO.
- ✓ Various standards for different purposes:
- ✓ HDTV vs video conferencing

Compressing Audio/Videos

MPEG Techniques

- ✓ Considering video as a sequence of pictures
- ✓ Some of the pictures known as I-frames are encoded entirely.
- ✓ Pictures between I-frames are encoded using relative encoding techniques (distinctions from the previous image)

Compressing Audio/Videos

MP3

- ✓ Developed within the MPEG.
- ✓ MP3 = MPEG layer 3.

Compressing Audio/Videos

MP3 working

- ✓ Taking advantage from human ear.
- ✓ Temporal Masking: for a short period after a loud sound, we can not hear soft sound.
- ✓ **Frequency Masking:** sound at one frequency tend to mask softer sounds at nearby frequencies.

Compressing Audio/Videos

MPEG and MP3

- ✓ Video cameras are able now to record hours worth video in 128MB.
- ✓ 400 popular songs on a single GB.
- ✓ Goal is not just reducing the space.
- ✓ Making an encoding that allow data transmission faster.

Compressing Audio/Videos

Data Transmission: MPEG and MP3

- ✓ Normally measure in bits per second. Kbps (1000 bits), Mbps (1 million bits), Gbps (1 billion bits).
- ✓ MPEG – successfully relayed on communication paths having 40 Mbps transfer rate.
- ✓ MP3 do not require transfer rate of more than 64 Kbps

Summary

Compressing Audio/Videos

- ✓ MPEG and MP3
- ✓ Space
- ✓ Transfer rate